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Biennial Report

OF

The State Historical and Natural History Society

OF

COLORADO

December 1, 1904—November 30, 1906



DENVER, COLORADO
THE SMITH-BROOKS PRINTING CO., STATE PRINTERS
1906

Biennial Report

OF


The State Historical and Natural History Society

OF

COLORADO

December 1, 1904—November 30, 1906





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OFFICERS OF THE STATE HISTORICAL AND NATURAL
HISTORY SOCIETY OF COLORADO.

President	Edward B. Morgan
Vice-Presidents.....	} Nathan A. Baker
	} George L. Cannon
Secretary.....	Charles R. Dudley
Treasurer	William D. Todd
Curator	William C. Ferril
Museum Assistant	Horace G. Smith

DIRECTORS.

Nathan A. Baker,	Granville Malcom,	
George L. Cannon,	William S. Ward,	Edward B. Morgan,
Charles R. Dudley,	Robert S. Roeschlaub,	
Aaron Gove,	William D. Todd,	

LETTER OF TRANSMITTAL.

Denver, Colorado, January 5, 1907.

To His Excellency,

JESSE F. McDONALD,

Governor of the State of Colorado.

Sir—I have the honor to submit herewith the report of
The State Historical and Natural History Society of Colorado,
for the biennial term ended November 30, 1906.

EDWARD B. MORGAN,

President.

BIENNIAL REPORT
OF
The State Historical and Natural History
Society of Colorado

December 1, 1904, November 30, 1906

REPORT OF THE CURATOR.

Denver, Colo., December 1, 1906.

To the President and Directors of The State Historical and
Natural History Society of Colorado.

Gentlemen—I have the honor to submit herewith my biennial
report as Curator of The State Historical and Natural History
Society of Colorado, for the fiscal years, December 1, 1904, to
November 30, 1906, inclusive.

DAYS OPEN AND ATTENDANCE.

Year	Fiscal Year, December 1, 1904 to November 30, 1905	Days Open	Attendance
1904			
December	26	9,265
1905			
January	25	10,158
February	22	8,531
March	27	12,108
April	24	9,475
May	26	9,744
June	26	10,710
July	25	23,540
August	27	17,729
September	26	66,161
October	26	8,823
November	25	6,476
Total	305	192,730

Year 1905	Fiscal Year, December 1, 1905 to November 30, 1906	Days Open	Attendance
December	25	6,553
1906			
January	26	6,784
February	22	5,706
March	27	6,546
April	25	7,355
May	26	9,293
June	25	11,741
July	24	16,572
August	27	14,964
September	24	7,994
October	27	8,413
November	24	6,614
Total	302	108,535

SUMMARY.

Fiscal Year	Days Open	Attendance
1904-1905	305	192,730
1905-1906	302	108,535
Total for biennial term.....	607	301,265

ADDITIONS DURING BIENNIAL TERM 1904-1906.

The following were the additions to the library, and general historical and scientific collections and museum, during the biennial term, December 1, 1904-November 30, 1906.

Pamphlets	.....	5,486
Books	.....	2,432
Special newspapers	.....	379
Newspaper files beginning	.....	32
Special magazines	.....	336
Bound volumes of newspapers	.....	369
Botany-Ellsworth Bethel botanical collection (estimated).....	12,000	
Field work by the society	.....	1,166
Total	.....	13,166
Historical collections	.....	38
Maps	.....	14
Paleontology	.....	12
Geology	.....	1
Ethnology—Cliff Dweller pottery and implements.....	708	
Miscellaneous	.....	7
Total	.....	715
Manuscripts	.....	10
Pictures	.....	238

Birds—

Alcoholic	9
Skins	283
Mounted	51

343

Insects—

Pinned	201
Alcoholic	6

207

Mammals—

Skins with skulls	25
Skulls without skins	8
Alcoholic	7
Architecture and food, showing wood gnawed by beavers.....	10

50

Comparative anatomy

1

Files of Colorado legislative calendars and bills.....

17

Magazine files beginning

Atlases—

Geological	45
Miscellaneous	7

52

Bound volumes of maps

Packages of library cards

Reptiles and Batrachians—

Snakes, alcoholic	20
Lizards, alcoholic	17
Toads, alcoholic	4
Salamanders, alcoholic	3
Turtle shell, dry	1

45

Genealogical charts

2

Spiders

2

Birds' nests

2

Birds' eggs

56

Fish—

Alcoholic	13
Mounted	1
Scale	1
Bones	2

17

Marine and Fresh Water Invertebrates—

Cray-fish, alcoholic	2
Miscellaneous, alcoholic	2
Star-fish, mounted	1
Total	5
	24,044

TOPICAL SUMMARY.

The State Historical and Natural History Society of Colorado, having been organized and incorporated for both historical and scientific purposes, the foregoing additions may be summarized for the biennial term by topic as follows:

HISTORICAL AND LIBRARY.

Pamphlets	5,486
Books	2,432
Special newspapers	379
Newspaper files beginning	32
Bound volumes of newspapers	369
Special magazines	336
Magazine files beginning	6
Historical collections	38
Maps	14
Bound volumes of maps	2
Atlases	52
Manuscripts	10
Pictures	238
Files of Colorado legislative calendars and bills	17
Packages of library cards	9
Genealogical charts	2
Ethnology	715
Total	10,137

SCIENTIFIC.

Botany	13,166
Paleontology	12
Mammals	50
Birds	343
Birds' eggs	56
Birds' nests	2
Fish	17
Reptiles and Batrachians	45
Insects	207
Spiders	2
Marine and fresh water invertebrates	5
Comparative anatomy	1
Geology	1
Total	13,907

SUMMARY.

Historical and library	10,137
Scientific	13,907
Total for biennial term	24,044

ATTENDANCE.

The attendance during the fiscal year 1904-5, numbering 192,730 visitors, was the largest in the history of this Society. This was greatly due to the national gatherings of the Grand Army of the Republic and the Epworth League in this city, together with the heavy tourist travel that accompanies such meetings. The largest number of visitors for any one month was in September, 1905, when 66,161 people crowded into the rooms of this Society, at the time of the Grand Army Encampment. This record for one month is without a precedent in the Society. The office staff was greatly assisted during this rush by our secretary, Mr. Charles R. Dudley, and our vice-president, Prof. George L. Cannon, and also Prof. Ellsworth Bethel, Assistant Curator for the Botanical department. The next largest attendance for any one month was July, 1905, during the time of the Epworth League convention, when the visitors numbered 23,545. The attendance during the fiscal year 1905-1906 was 108,535, the heaviest month being July, 1906, at the time of the Elks' convention in Denver, when our visitors numbered 16,572.

During the biennial term the rooms of the Society were opened to the public on 607 separate days, the total number of visitors being 301,265. Although the Society has a large regular attendance, yet, during the summer months, the number of visitors will vary, owing to the tourist travel, and the number of large convention meetings that may be held in Denver.

MORE THAN A MILLION VISITORS.

The rooms of the Society were first regularly opened in the State House, August 14, 1896, at the time of my appointment as Curator. Since that time, the collections of this Society have been open to the public on 3,097 separate days, and the visitors have numbered 1,231,855—as shown by the following record:

Year	Days Open	Attendance
August 14, 1896 to December 31, 1896.....	117	10,587
January 1, 1897 to December 31, 1897.....	303	52,766
January 1, 1898 to November 30, 1898.....	259	68,559
Biennial term, 1898-1900.....	610	228,863
Biennial term, 1900-1902.....	595	294,983
Biennial term, 1902-1904.....	606	274,832
Biennial term, 1904-1906.....	607	301,265
Total	3,097	1,231,855

The record speaks for itself of the popular favor entertained towards the large and increasing collections of the museum, historical and scientific departments of the Society.

SUMMARY OF ADDITIONS FOR EIGHT YEARS.

The following is a summary of the additions that have been made during the past eight years:

HISTORICAL AND LIBRARY.

Biennial Terms	Additions
December 1, 1898-November 30, 1900.....	6,462
December 1, 1900-November 30, 1902.....	2,255
December 1, 1902-November 30, 1904.....	7,477
December 1, 1904-November 30, 1906.....	10,137
Total	<u>26,331</u>

SCIENTIFIC.

Biennial Terms	Additions
December 1, 1898-November 30, 1900.....	3,925
December 1, 1900-November 30, 1902.....	7,526
December 1, 1902-November 30, 1904.....	10,171
December 1, 1904-November 30, 1906.....	13,907
Total	<u>35,529</u>

SUMMARY.

Historical and library.....	26,331
Scientific	<u>35,529</u>
Total additions for eight years.....	61,860
Historical, library and scientific—August 14, 1896, to November 30, 1898 (estimated)	<u>5,000</u>
Total	<u>66,860</u>

MORE THAN SEVENTY THOUSAND.

Thus, since my appointment as Curator, August 14, 1896, the total number of additions in the historical, scientific, library and museum, have been 66,860.

Estimating the total collections, August 14, 1896, at 5,000, the grand total of the property of the Society would aggregate 71,860.

PUBLICATIONS.

The following publications were issued by the Society during the biennial term just closed:

Documents	No. Copies
Biennial report of the Society, December 1, 1902-November 30, 1904....	500
Historical Series No. 1, "Colorado Volunteers in the Civil War; the New Mexico Campaign in 1862".....	<u>1,200</u>
Total	1,700

MISCELLANEOUS.

The following are miscellaneous items for the last biennial term:

Letters written	2,346
Letters received	1,235
Consulted library	2,629

Educational Lectures in the Museum by Curator to 28 classes, numbering 979 pupils, accompanied by 36 teachers.

Total number of pamphlets was decreased by fifteen, which were bound in two volumes, and same accessioned as books.

DUE ON TRANSFERS.

Books due on transfer to libraries, to be paid for in exchange.....	1
Insects due on transfer, to be paid for in exchange.....	1
Total due on transfer.....	2

EDUCATIONAL.

This society is not only historical and scientific in its scope, but is a State educational institution in its plan and practical workings. It has been the custom to permit teachers to schedule dates for lectures by the curator in the museum, for classes from the schools, the pupils taking notes and making drawings on historical and scientific subjects that may be discussed. Lecture talks have thus been given, the curator's services being free, to 28 classes, numbering 979 pupils who were accompanied by 36 teachers. More would have been accomplished in this line if our appropriations had been larger. The curator has been compelled to refuse dates for many classes, as our working staff was not large enough to permit more time to be given for this purpose.

LECTURES BY THE CURATOR.

	Classes	Teachers	Pupils
Biennial Term, 1904-1906	28	36	979
Former Years	260	304	10,082
Total	288	340	11,061

This makes a grand total of 11,401 pupils and teachers to whom the curator has given lecture-talks in our museum. In the record of the regular class room work, there is not included the thousands of pupils and students who visit our museum, historical and scientific departments for study and original research. Not only advanced students, but teachers as well, collecting data for use in their school rooms elsewhere in the state, are frequent visitors.

Thus both locally and from a state standpoint, in a practical way, this society has become a prominent educational factor in Colorado.

THE LIBRARY.

The library, in books, pamphlets, newspaper files and other additions belonging thereto, now numbers a collection of about 25,000. With the exception of the "Edward B. Morgan Collection," and some other valuable documents, the general library occupies the greater part of our space in the sub-basement, which is connected with our rooms above by a separate iron stairway. Five rooms have been added during the past year by the Board of Capitol Managers, to our library space in the sub-basement. In these new rooms have been stored unbound newspaper files and other documents, and thus has been afforded the opportunity for a general clean up and better arrangement of the library and the placing of the newly added bound volumes of Colorado newspapers.

THE EDWARD B. MORGAN COLLECTION.

Valuable accessions have been made to the Edward B. Morgan Collection, which consists of books, pamphlets, maps and other documents relating to Colorado, either in subject matter or by authorship. In addition to recent donations by Mr. Morgan, together with a few from others during the biennial term, there have also been purchased for the collection, 260 books and pamphlets and 77 magazines. The Edward B. Morgan Collection occupies what is known as the "Morgan" room, adjoining the museum. It is frequently consulted not only in the popular sense, but also most appreciatively by authors and those engaged in original research or preparing theses in the graduate courses of our leading educational institutions. Critical writers and students of Colorado history here find a rare and comprehensive list. During the past year these works have been catalogued.

NEWSPAPER FILES.

All Colorado editors and publishers have been requested to send, complimentary, to this society, files of their newspapers or other publications. There has been a liberal response during the past ten years and as rapidly as funds are available for that purpose, these files are bound. During the biennial term there were bound 369 volumes, which, with those hitherto added to the library, give a total of 865 bound volumes of Colorado newspapers. Many files are still unbound. The newspaper file room is in charge of Mr. James F. C. Boyd. Some leading newspapers from other states are also received and preserved. Our most valuable files of the pioneer history of Colorado consist of the "Rocky Mountain News" from 1859 to 1878, the gift of the late president of this society, the Hon. William N. Byers.

THE MUSEUM.

The museum space has been increased by the Board of Capitol Managers, by case room in the rotunda and basement of the

dome. With the assistance of the Board of Capitol Managers twelve new upright cases have been made and placed in the dome space where the birds are now exhibited. The cases in the museum hall, formerly occupied by the birds, have been filled with the new and valuable collection of "Cliff Dweller" pottery and implements, which was purchased from Captain Cecil A. Deane. The space of the old "Cliff Dweller" exhibit has been condensed and two rooms reserved for the Ellsworth Bethel Botanical collection, which has been purchased. These are among the most important of the general changes made, requiring much time and work. Some of the minor details in arrangement are yet to be perfected.

The museum includes in its exhibits not only historical relics and pictures, but the flora and fauna of Colorado, and many fossils.

GENERAL PIKE'S SWORD.

The most interesting historical relic, recently obtained, is the sword worn by General Zebulon Montgomery Pike at the time he received his mortal wounds in the battle of "Little York" at York (now Toronto), Canada, April 27, 1813. A special case has been made in which to exhibit the sword and it is now one of the most attractive features of the museum. At the time Mr. Edward B. Morgan, as president of this society, delivered his address in Colorado Springs, on "Pike in History," during the Pike's Peak centennial, this sword was placed on exhibition. It was the most interesting relic of General Pike at that centennial. Only brief mention is here made of that event as the secretary's report will give it more in detail.

HISTORICAL RELICS.

Many of the relics of the pioneer and heroic days of the state's history have been placed in the museum. These with pictures, both on the walls and in the show cases, together with other exhibits, are attractive features, not only to the tourist, but our own people as well.

ETHNOLOGY.

The department of Ethnology has been increased by the accession of 715 articles. Of this number 708 were obtained by purchase from Captain Cecil A. Deane, nearly the whole collection being "Cliff Dweller" pottery and implements from the southwest. The original "Cliff Dweller" exhibit consisted of about 3,000 articles from southwestern Colorado. This, together with the Deane purchase and other additions, including those formerly presented in the Chain collection, gives a grand total of about 4,000 relating to our prehistoric period. Mr. W. S. Ward has kindly consented to arrange the Deane exhibit.

THE HERBARIUM.

Great progress has been made in the work of the Herbarium, now known as the "Ellsworth Bethel Botanical Collection." The Society purchased from Prof. Ellsworth Bethel his extensive herbarium, said to contain from 3,000 to 5,000 flowering plants and from 5,000 to 10,000 cryptogams, the latter including from 1,000 to 5,000 fungi, etc.

Professor Bethel estimates the total at about 12,000. In field work for the Society by the Curator, and Mr. Horace G. Smith, and Mr. William Huestis, together with a few gifts, there were also added 1,166 botanical specimens, mostly flowering plants, making a grand total of 13,166 for the biennial term.

Hitherto, the Society had collected more than 5,000 specimens for the Botanical department, which, with the exception of several hundred presented by Mrs. L. J. Brewster, were mostly obtained in field work by representatives of the Society. The combination of all the botanical exhibits gives a grand total of more than 18,000 in the herbarium, being almost exclusively Colorado specimens. Cases are now building for the botanical exhibit. Professor Bethel will, as rapidly as possible, classify and arrange the Herbarium, which is now one of the finest in the West.

ORNITHOLOGY.

The Ornithological department was increased by 283 skins, 51 mounted, and 9 specimens preserved in alcohol, making a total of 343. The collection composed almost exclusively of Colorado birds, now numbers 2,206, classified and catalogued. There are 428 mounted specimens, and the rest, excepting a few alcoholics, are bird skins. The exhibit also contains 46 tropical birds, all mounted, making a grand total of 2,252. The accessions for the biennial term were mostly obtained in field work for the Society by Mr. Horace G. Smith and the Curator.

This department contains the finest bird exhibit in Colorado, and among the specimens are some of the rarest species found in the State.

Mr. Horace G. Smith, with few exceptions, has the birds classified up to date, and the mounted specimens have card markers, giving both the common and the scientific names. Among the rarer birds added to the collection were several specimens of the Baltimore oriole, with nest and eggs, from Yuma County, Colorado; also specimens of the Orchard Oriole, the Bell Vireo, the Western Blue Grosbeak, the Blue Jay and Dickcissel, taken and found breeding in the same locality, by Mr. Horace G. Smith. A species of the Hairy Woodpecker, new to the State, was also taken by Mr. Smith in the same county.

Specimens of a rare Gnatcatcher and a Canon Wren were taken at Grand Junction by the Curator, and a trip to Hugo, Colorado, yielded a specimen of the Indigo Bunting, a species rarely taken in the eastern portion of the State.

PALEONTOLOGY.

Space having been assigned for the department of Paleontology, Prof. Geo. L. Cannon, is now engaged in the classification and arrangement of the several hundred fossils in the museum of the Society. Some rare specimens have recently been added. A good foundation has been laid and this department should be rapidly pushed, and especially, as this region is so rich and wonderful in its paleontological records. Many of the rarest fossils have been secured for eastern museums. The expense of exploring and obtaining these ancient monsters is heavy and hence, for lack of funds, the work of the Society in this line has been retarded.

MAMMALS.

The largest mammals of the State are well represented in the museum, either entire or by mounted heads, and many of the smaller species by mounted specimens or skins. Forty specimens were added by Mr. Horace G. Smith and the Curator, together with ten pieces of wood, showing food and architecture of the Beavers. This department is now growing into a valuable collection.

FISH, REPTILES AND INVERTEBRATES.

Additions were also made to the department of Fish and Reptiles and Batrachians, which now make a good showing. A large "Tarpon," handsomely mounted, was taken at Corpus Christi, Gulf of Mexico, and presented by Mrs. L. E. Campbell of Denver. Broadly considered, all branches of animal life have been included in the accessions to the museum. The collection of insects numbers about 8,000, and marine and fresh water invertebrates about 7,000. Mr. Horace G. Smith, the museum assistant, has rendered valuable service in all lines of this work.

STEEL FIXTURES FOR VAULTS.

The Board of Capitol Managers, recently placed steel fixtures in our vault. This change has long been needed, not only as better protection for records, manuscripts, pictures and more valuable relics and documents, but for a more methodical and systematic arrangement. As time may permit, the contents of the vault are arranged alphabetically or by topic, ready for convenient reference.

COLORADO HISTORY.

From every source possible, as funds may be available therefor, the Society is collecting and preserving Colorado history, together with data, connecting the State with broad national links. The pre-historic is shown in the splendid exhibit of about 4,000 articles and implements from the "Cliff Dwellers" of the South-

west. The Edward B. Morgan Collection, with rare volumes, maps and documents of exploration and settlement, together with those illustrative of the more recent development and progress, is an invaluable source from which to obtain data relating not only to our historic age, but also facts as to the State's development up to the present time. State documents, and those unofficial publications setting forth our history, resources, and industries, have been arranged for ready reference. Pictures of pioneers and historic events and places, to which collection Mr. Jerome C. Smiley has donated some rare photographs, are being added. These all, with relics, newspaper clippings and other lists that could be enumerated, but emphasize the efforts making to collect and preserve Colorado history.

There is one weak link, at least, the lack of original manuscripts. A stenographer is needed, not only to assist in the general correspondence, but also to take dictations of the surviving pioneers, that their reminiscences and memoranda of the early days may be preserved. Some manuscripts have been obtained, but this phase of the work should be pushed with vigor, and every effort made to obtain an appropriation for a stenographer.

COLORADO IN THE CIVIL WAR

Under the title of "Colorado Volunteers in the Civil War—The New Mexico Campaign in 1862," Vol. No. 1—Historical Series, was published by the Society. The manuscript was the gift of General U. S. Hollister, to whom it had been presented by the author, William Clarke Whitford, D. D., President of Milton College. The manuscript was edited by Mr. Jerome C. Smiley, who also wrote the preface for the same. The introduction by Dr. Whitford, and the preface by Mr. Smiley, fully explain the object and scope of the work. This excellent beginning should be followed by others in the historical series and also scientific publications.

DONORS.

The list of donors would make a small volume in itself, for we are pleased to state that they are many. The name of each donor is preserved in the records of the Society. These gifts are not only appreciated by the Society, but show the interest taken as well.

COLORADO'S SEMI-CENTENNIAL

The year 1908 will mark the date of what is commonly referred to as the Colorado Semi-Centennial. Already the question is being discussed as to what observance should be made of this anniversary, and the proper method of celebrating so auspicious an event.

As Curator of this department, on March 11, 1901, I addressed the following communication to the Legislature:

Denver, Colo., March 11, 1901.

To The Honorable,

The Thirteenth General Assembly,
State of Colorado.

The centennial anniversary of the exploration by Lieutenant Zebulon Montgomery Pike, of what is now Colorado, will occur in 1906-7, at which time it would be fitting and appropriate to hold a great exposition in this State.

The semi-centennial of the discovery of gold within our present borders will be in 1908—which date would also be appropriate for such an exposition. Although for about half a century prior thereto, precious metals had at various times been found, yet the discovery that led to practical results and the real founding of the state, was that of 1858. But, the centennial of the Pike exploration and the semi-centennial of the discovery of the precious metals, will approximate the same date, and may easily be combined into one great exposition. To commemorate thus, either of these events, would, I believe, meet with the approval of the people of this State, but upon investigation it may be found advisable to combine the two—the centennial of exploration and the semi-centennial of progress and development.

I would respectfully suggest to your Honorable Body that some such exposition should be held to commemorate these historic events, and that the present is none to soon to begin the preliminary work. Hence, I would further respectfully suggest that a joint committee of the Senate and House be appointed, to prepare and introduce a joint or concurrent resolution, as may be deemed advisable, providing for the appointment of a board of commissioners, for the present biennial term or until their successors shall be chosen and qualified, to serve without salary, to examine into the matters herein set forth, and as to the advisability of holding such an exposition. Said commissioners shall file a report with the Governor setting forth their views, ways and means, and the practicability of such proposed exposition, the same to be published by the Secretary of State as a public document, and laid before the next General Assembly of the State of Colorado. Let us now begin the preliminary work of preparing for a great centennial or semi-centennial, or the combination of the two, in which our sister states and territories, and foreign countries shall be invited to participate. Such an exposition will prove to the world our wonderful resources, as well as our progress, development and high civilization, and also further aid in collecting and preserving the history of our heroic age.

Respectfully,

WILLIAM C. FERRIL,
Curator.

This matter was on the "General Order" of the calendar of the House, for consideration, but was not reached, owing to the rush of business towards the close of the session. Members of the

Legislature with whom I discussed the subject, seemed favorable to the idea of appointing the commission. Busy with other matters, I did not have time to urge it, and the question of an appropriation for the Louisiana Purchase Exposition at St. Louis, had the precedence over all others on this subject. Although it may not have added to the success of the Pike Centennial, which was so well carried out, yet, could the advice then given have been followed, it is possible that the State would not now be discussing the question as to whether Colorado's semi-centennial shall be observed by an exposition, or otherwise. It is a subject that should be given due consideration by the Society.

NEEDS OF THE SOCIETY.

Among the needs of the Society, is a stenographer, as already set forth, and an increase in the staff for clerical, historical and scientific work. An appropriation is also needed, to enable the Society to obtain historical and scientific collections, and preserve, arrange and catalogue the same; to purchase books and documents, bind paper files and otherwise fulfill the purpose of its organization.

Our collections and exhibits now occupy about thirty rooms—the most extensive department in the State House. The care, custody and protection of the property owned by the Society, together with the additions that must be made to keep up with the demands of the public, is a problem requiring serious consideration. The work is rapidly increasing. Notwithstanding the excellent exhibits elsewhere, our museum and collections being located in the more congested center of the State's population, together with the fact that we must meet the brunt of the heavy tourist travel, make the task difficult with our light appropriations.

The record of more than 300,000 visitors during our biennial term, tells its own story. Our collections are increasing. The public knows it, and, as is their right, they demand and expect more and should be accommodated. They come to us for history. They come to us to name the wild flowers, to classify and identify the birds, mammals, butterflies and other forms of animal life. All of this must be met by our small staff, and although sometimes given valuable assistance by other officers of the Society, still the demands of the public are hard to meet.

FINANCES.

At the last session, the annual appropriation for the Curator's salary was made \$1,500; the museum assistant, \$800, and the expense account \$400. These amounts were paid on duly approved vouchers, filed with the Auditor of State. Some aid was also given by the State Auditing Board and the Board of Capitol Managers.

The special appropriation of \$6,000 was also expended on duly approved vouchers. This fund was used to purchase the sword of General Zebulon M. Pike, valuable cliff dweller, botanical and other historical and scientific exhibits; also books and pamphlets, bind newspaper files, publish the history of "The Colorado Volunteers in the Civil War, New Mexico Campaign in 1862," obtain cases and fixtures for the museum; and also to collect, preserve and catalogue historical documents and scientific specimens.

The Curator wishes to express his thanks to the office staff, and Mr. William Huestis and Mr. Frank L. Fetzer, who for a short time assisted us, for faithful services performed; also the officers and members of the Society, the State officials, the Board of Capitol Managers and the State Auditing Board, with their officers, for many courtesies and kindly assistance.

Respectfully submitted,

WILLIAM C. FERRIL,

Curator.

The Colorado Academy of Science
of
The State Historical and Natural History
Society
of
Colorado.

Biennial Report, December 1, 1904, November 30, 1906

OFFICERS

COLORADO ACADEMY OF SCIENCE

OF

THE STATE HISTORICAL AND NATURAL HISTORY
SOCIETY

OF

COLORADO

President	Ellsworth Bethel
First Vice-President.....	Charles S. Palmer
Second Vice-President.....	Alva H. Felger
Secretary and Treasurer.....	William C. Ferril

EXECUTIVE COMMITTEE.

George L. Cannon (Chairman).
Charles I. Hays, Mrs. Cornelia S. Miles, and ex-officio
Ellsworth Bethel and William C. Ferril.

SECTIONS, AND CHAIRMEN OF EACH.

Section I—Botany	Ellsworth Bethel
Section II—Zoology	Alva H. Felger
Section III—Geology	George L. Cannon
Section IV—Microscopy	Dr. J. B. Kinley
Section V—Meteorology and Physical Science..	John B. Garvin
Section VI—Nature Study	S. Arthur Johnson
Section VII—Anthropology and Ethnology....	Dr. A. L. Bennett

LETTER OF TRANSMITTAL.

DENVER, COLO., January 5, 1907.

To the President and Directors of The State Historical and
Natural History Society of Colorado.

Gentlemen—We have the honor to transmit, herewith, the
biennial report of the Colorado Academy of Science of The State
Historical and Natural History Society of Colorado, for the
fiscal years, December 1, 1904-November 30, 1906.

Respectfully submitted,

ELLSWORTH BETHEL,

President.

G. L. CANNON,

Chairman Executive Committee,

Colorado Academy of Science.

REPORT OF THE SECRETARY.

DENVER, COLO., January 5, 1907.

Prof. Ellsworth Bethel, President.

Prof. George L. Cannon, Chairman Executive Committee, Colorado Academy of Science, of The State Historical and Natural History Society of Colorado.

Gentlemen—I have the honor to submit, herewith, my biennial report as Secretary of the Colorado Academy of Science, of The State Historical and Natural History Society of Colorado, for the fiscal years, December 1, 1904–November 30, 1906.

The Colorado Academy of Science, organized in a preliminary way in 1896, began its regular work as a department at its first meeting, held in the Chamber of the Colorado Supreme Court, January 29, 1897. The membership of the Academy includes those members of The State Historical and Natural History Society of Colorado, who are interested in one or more branches of Natural History. It was originally known as the Department of Natural History of The State Historical and Natural History Society of Colorado. At the annual meeting of the parent society, held January 16, 1900, permission was granted to change the name to Colorado Academy of Science of The State Historical and Natural History Society of Colorado. At a meeting of the Department of Natural History held in the rooms of the Society, January 23, 1900, the new name was adopted, and on February 13, 1900, it first met as the Academy.

The officers and members of the Academy confine their work to original research, and assist in making a general natural history survey of the State. The Academy has rendered valuable assistance in the arrangement and classification of the specimens in the museum.

Owing to the need of a convenient lecture room, the Academy has not been active during the last biennial term, in holding regular meetings for the discussion of scientific subjects. Yet its members and officers have continued their investigations along several important branches of science, and have data available for publication, whenever funds may be obtained therefor. Many interesting lectures have been delivered before the Academy, both in the popular and scientific phases, and it is to be regretted that funds were not obtainable at the time for their publication.

The Academy will revive its former activity when better arrangements, which are now being considered, shall have been perfected for meetings. Since its organization the following lectures have been delivered before the Academy:

- The Black Plague of Bombay—Dr. W. C. Crouch.
- The Petrified Woods of the Denver Basin—George L. Cannon.
- The Geology of the Table Mountains at Golden—Arthur Lakes.
- Diatoms—Their Uses and Indications—Dr. D. A. Richardson.
- The Current Botanical Literature—Ellsworth Bethel.
- Diatoms—Cleansing and Mounting—Dr. D. A. Richardson,
- Color Photography—John Garvin.
- The Corpuscles of the Blood—Dr. A. M. Holmes.
- The Sanrian Remains from Southwestern Colorado—W. T. Lee.
- The Great Sun-Spot of 1897—Herbert A. Howe.
- Spring Flowers of Colorado—Charles I. Hays.
- Some Medicinal Plants of Colorado—Dr. John Kochan.
- The Geology and Ore Deposits of the La Plata Mountains—Arthur Lakes.
- Ancient Vertebrates or the Extinct Monsters of Colorado—W. T. Lee.
- The Peculiarities of the Bird Skeleton—George L. Cannon.
- The Color of the Plumage of Birds—A. M. Collett.
- Explanations of the Diatoms Found in the West Denver Deposit—Dr. D. A. Richardson.
- The Amphiprora and Diatomaceae of the State of Colorado (Illustrated by Plates of 100 Valves)—Dr. D. A. Richardson.
- The Common Spring Flowers of Denver—Charles I. Hays.
- Discussion—Ellsworth Bethel.
- The Common Spring Birds of Denver—Horace G. Smith.
- Discussion—Howard S. Reed, A. M. Collett.
- Peristomes of Fontinalis Antipyretica—Dr. D. A. Richardson.
- Cottonwood Buds and Twigs—George L. Cannon.
- Atmosphere of the Planets—Herbert A. Howe.
- Frogs and Toads. A Nature Study for May—S. A. Johnson.
- Explanation of the Instruments Used in Recording the Weather and
- The Humidity of the Atmosphere of Colorado—F. H. Brandenburg.
- The Autumnal Migration of Birds—A. M. Collett.
- The Diatoms of the Denver Water Supply—Dr. D. A. Richardson.
- The Falling Leaves—George L. Cannon.
- A Naturalist's Vacation in California—Arthur Lakes.
- A Study of the Denver Flag Stones. Fossil Footprints, Ripple and Rain Marks—Edwin Blackburn.
- The Archaeology of the Swastika and Other Cruciform Symbols, Illustrated by Recent Discoveries in San Juan, Yucatan and the Ruins of the Cliff Dwellers, Demonstrating the Prevalence of a Masonic Religion among the Prehistoric People of America (Illustrated by Forty Stereopticon Views)—Sidney F. Smith.

The Indians of Denver As I Found Them—William N. Byers.
Ornithology in Our Public Schools—A. M. Collett.

The First Signs of Spring—A Nature Study for March—
George L. Cannon.

The Generalities of Entomology—A Nature Study on the Ten
Commonest Species of Butterflies to be Found Near Den-
ver—E. J. Oslar.

Stereopticon Exhibit of Views of Arranged Diatoms, and of
the Microscopic Structure of Common Insects—Dr. D. A.
Richardson.

The Planet Eros—Herbert A. Howe.

Alfalfa—E. B. T. Spencer.

Some Interesting Peculiarities of Seedlings—Francis Ram-
aley.

Serum Therapy—Dr. Sherman Williams.

Contagious Diseases—Dr. F. C. Tuxbury.

The Figure of the Earth—C. W. Comstock.

Ethical Value of Science—Regis Chauvenet.

Scientific Review—Mrs. Cornelia S. Miles.

Some Peculiarities of the Rattlesnake—William C. Ferril.

The Turquoise and Anthracite Mines of Cerillos, New Mex-
ico, and a Trip Through Parts of New Mexico, Little
Known—Arthur Lakes.

Scientific Review—George L. Cannon.

Beavers—Dr. J. B. Kinley.

Crinoidal Limestone in Denver—Edwin Blackburn.

The Geology of the Colorado Oil Fields—George L. Cannon.

The Atmosphere of the Moon—I. W. Beckwith.

Address on the Death of Prof. A. M. Collett, Late President
of the Colorado Academy of Science—George L. Cannon.

Puff Balls—E. B. Sterling.

Death of the Leaves—George L. Cannon.

Navajo Blankets—Their Origin and Symbolism—U. S. Hol-
lister.

The Value of the Cranial Capacity as Indicating the Degree
of Intelligence of the Prehistoric Cliff Dwellers of the
Southwest, Based on Data Obtained in the Cranial
Measurements of the Skulls in the Museum of The State
Historical and Natural History Society of Colorado—
Dr. A. L. Bennett.

The Work and Plans to Preserve the Prehistoric Ruins of the
Southwest—Mrs. W. S. Peabody.

Forestry—Considered with Special Reference to Colorado—
Henry Michelsen.

Forest and Shade Trees of Colorado—Ellsworth Bethel.

The Preservation of Our Wild Flowers—George L. Cannon.

The Economic Value of Our Common Birds—A. H. Felger.

This list speaks for itself of the good that could have resulted had these lectures been published. Science, both in popular and higher forms, was discussed in almost every phase. Some of these lectures would have been invaluable, for nature study work in the schools of the State, while others would have assisted in the higher and broader scientific research.

Respectfully submitted,

WILLIAM C. FERRIL, Secretary,
Colorado Academy of Science.



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